TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

Job Number: 580-8768-1

Job Description: Alaska Copper & Brass, Seattle, WA

For:
Clean Harbors Environmental Services Inc
19320 Des Moines Memorial Dr
Bldg D, Suite 400
Seatac, WA 98148

Attention: Jason Sullivan

Heather Curbow
Project Manager I
heather.curbow@testamericainc.com
01/30/2008

TestAmerica Tacoma is a part of TestAmerica Laboratories, Inc.



The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in the case narrative.

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ACCREDITED IN ACCORDANCE WITH nelac

## EXECUTIVE SUMMARY - Detections

Client: Clean Harbors Environmental Services Inc  Job Number: 580-8768-1

| Lab Sample ID<br>Analyte | Client Sample ID | Result / Qualifier | Reporting Limit | Units | Method |
|---|---|---|---|---|---|
| **580-8768-1** | **COMP SAMPLE 1** | | | | |
| *TCLP* | | | | | |
| Chromium | | 0.41 | 0.025 | mg/L | 6010B |

# METHOD SUMMARY

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8768-1

| Description | Lab Location | Method | Preparation Method |
|---|---|---|---|
| **Matrix: Solid** | | | |
| Inductively Coupled Plasma - Atomic Emission Spectrometry | TAL TAC | SW846 6010B | |
| Toxicity Characteristic Leaching Procedure | TAL TAC | | SW846 1311 |
| Acid Digestion of Aqueous Samples and Extracts for | TAL TAC | | SW846 3010A |
| Mercury in Liquid Waste (Manual Cold Vapor Technique) | TAL TAC | SW846 7470A | |
| Toxicity Characteristic Leaching Procedure | TAL TAC | | SW846 1311 |
| Mercury in Liquid Waste (Manual Cold Vapor | TAL TAC | | SW846 7470A |

**Lab References:**

TAL TAC = TestAmerica Tacoma

**Method References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## SAMPLE SUMMARY

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8768-1

| Lab Sample ID | Client Sample ID | Client Matrix | Date/Time Sampled | Date/Time Received |
|---|---|---|---|---|
| 580-8768-1 | Comp Sample 1 | Solid | 01/22/2008 1730 | 01/23/2008 1400 |

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8768-1

**Client Sample ID: Comp Sample 1**

Lab Sample ID: 580-8768-1
Client Matrix: Solid

Date Sampled: 01/22/2008 1730
Date Received: 01/23/2008 1400

**6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 6010B | Analysis Batch: 580-27744 | | Instrument ID: | SEA027 |
| Preparation: | 3010A | Prep Batch: 580-27726 | | Lab File ID: | N/A |
| Dilution: | 1.0 | Leachate Batch: 580-27710 | | Initial Weight/Volume: | 50 mL |
| Date Analyzed: | 01/29/2008 1408 | | | Final Weight/Volume: | 50 mL |
| Date Prepared: | 01/29/2008 1000 | | | | |
| Date Leached: | 01/28/2008 1444 | | | | |

| Analyte | DryWt Corrected: N | Result (mg/L) | Qualifier | RL |
|---|---|---|---|---|
| Lead | | ND | | 0.030 |
| Cadmium | | ND | | 0.010 |
| Barium | | ND | | 0.010 |
| Silver | | ND | | 0.020 |
| Arsenic | | ND | | 0.060 |
| Selenium | | ND | | 0.10 |
| Chromium | | 0.41 | | 0.025 |

**7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)-TCLP**

| | | | | | |
|---|---|---|---|---|---|
| Method: | 7470A | Analysis Batch: 580-27772 | | Instrument ID: | SEA029 |
| Preparation: | 7470A | Prep Batch: 580-27727 | | Lab File ID: | N/A |
| Dilution: | 1.0 | Leachate Batch: 580-27710 | | Initial Weight/Volume: | 5 mL |
| Date Analyzed: | 01/30/2008 1041 | | | Final Weight/Volume: | 50 mL |
| Date Prepared: | 01/29/2008 0936 | | | | |
| Date Leached: | 01/28/2008 1444 | | | | |

| Analyte | DryWt Corrected: N | Result (mg/L) | Qualifier | RL |
|---|---|---|---|---|
| Mercury | | ND | | 0.0020 |

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8768-1

**Method Blank - Batch: 580-27726**

**Method: 6010B**
**Preparation: 3010A**

Lab Sample ID: MB 580-27726/11-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/29/2008 1312
Date Prepared: 01/29/2008 1000

Analysis Batch: 580-27744
Prep Batch: 580-27726
Units: mg/L

Instrument ID: SEA027
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

| Analyte | Result | Qual | RL |
|---|---|---|---|
| Lead | ND | | 0.030 |
| Cadmium | ND | | 0.010 |
| Barium | ND | | 0.010 |
| Silver | ND | | 0.020 |
| Arsenic | ND | | 0.060 |
| Selenium | ND | | 0.10 |
| Chromium | ND | | 0.025 |

**Lab Control Spike/**
**Lab Control Spike Duplicate Recovery Report - Batch: 580-27726**

**Method: 6010B**
**Preparation: 3010A**

LCS Lab Sample ID: LCS 580-27726/12-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/29/2008 1335
Date Prepared: 01/29/2008 1000

Analysis Batch: 580-27744
Prep Batch: 580-27726
Units: mg/L

Instrument ID: SEA027
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-27726/13-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/29/2008 1339
Date Prepared: 01/29/2008 1000

Analysis Batch: 580-27744
Prep Batch: 580-27726
Units: mg/L

Instrument ID: SEA027
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

| Analyte | % Rec. LCS | % Rec. LCSD | Limit | RPD | RPD Limit | LCS Qual | LCSD Qual |
|---|---|---|---|---|---|---|---|
| Lead | 110 | 112 | 80 - 120 | 1 | 20 | | |
| Cadmium | 110 | 111 | 80 - 120 | 1 | 20 | | |
| Barium | 107 | 109 | 80 - 120 | 1 | 20 | | |
| Silver | 105 | 106 | 80 - 120 | 1 | 20 | | |
| Arsenic | 104 | 105 | 80 - 120 | 1 | 20 | | |
| Selenium | 106 | 108 | 80 - 120 | 1 | 20 | | |
| Chromium | 107 | 108 | 80 - 120 | 1 | 20 | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8768-1

**Method Blank - Batch: 580-27727**

**Method: 7470A**
**Preparation: 7470A**

Lab Sample ID: MB 580-27727/11-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/30/2008 1019
Date Prepared: 01/29/2008 0936

Analysis Batch: 580-27772
Prep Batch: 580-27727
Units: mg/L

Instrument ID: SEA029
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

| Analyte | Result | Qual | RL |
|---|---|---|---|
| Mercury | ND | | 0.0020 |

**Lab Control Spike/**
**Lab Control Spike Duplicate Recovery Report - Batch: 580-27727**

**Method: 7470A**
**Preparation: 7470A**

LCS Lab Sample ID: LCS 580-27727/12-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/30/2008 1024
Date Prepared: 01/29/2008 0936

Analysis Batch: 580-27772
Prep Batch: 580-27727
Units: mg/L

Instrument ID: SEA029
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 580-27727/13-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 01/30/2008 1028
Date Prepared: 01/29/2008 0936

Analysis Batch: 580-27772
Prep Batch: 580-27727
Units: mg/L

Instrument ID: SEA029
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

| | % Rec. | | | | | | |
|---|---|---|---|---|---|---|---|
| Analyte | LCS | LCSD | Limit | RPD | RPD Limit | LCS Qual | LCSD Qual |
| Mercury | 101 | 101 | 75 - 125 | 0 | 20 | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

Sullivan.Jason@CleanHarbors.com

# Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

**TestAmerica**
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

| Client | Project Manager | Date | Chain of Custody Number |
|---|---|---|---|
| CLEAN HARBORS | Jason Sullivan | 1/23/08 | 052094 |
| **Address** BLDG. 2 | **Telephone Number (Area Code)/Fax Number** | **Lab Number** | **Page** 1 of 1 |
| 19320 DES MOINES MEMORIAL DR, STE 400 | 206 731-5374 | 8768 | |
| **City** / **State** / **Zip Code** | **Site Contact** / **Lab Contact** | **Analysis (Attach list if more space is needed)** | |
| SEATAC / WA. | | TCLP Ricin | |
| **Project Name and Location (State)** | **Carrier/Waybill Number** | | |
| ALASKA COPPER & BRASS, SEATTLE, WA. | | | |
| **Contract/Purchase Order/Quote No.** | | | |

| Sample I.D. No. and Description (Containers for each sample may be combined on one line) | Date | Time | Matrix: Air | Aqueous | Sed. | Soil | Containers & Preservatives: Unpres. | H2SO4 | HNO3 | HCl | NaOH | ZnAc/NaOH | Analysis | Special Instructions/ Conditions of Receipt |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Comp Sample 1 | 1-22-8 | 5:30 | | | | | | | | | | | X | |

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**Possible Hazard Identification**
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

**Sample Disposal**
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

**Turn Around Time Required**
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other 10

**QC Requirements (Specify)**

| 1. Relinquished By | Date | Time | 1. Received By | Date | Time |
|---|---|---|---|---|---|
| Jason Sullivan | 1-23-8 | 2pm | K | 1/23/08 | 2pm |
| 2. Relinquished By | Date | Time | 2. Received By | Date | Time |
| | | | | | |
| 3. Relinquished By | Date | Time | 3. Received By | Date | Time |
| | | | | | |

Comments

**DISTRIBUTION:** WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

AKC-0019580

# Login Sample Receipt Check List

Client: Clean Harbors Environmental Services Inc

Job Number: 580-8768-1

**Login Number: 8768**
**Creator: Presley, Kim**
**List Number: 1**

**List Source: TestAmerica Tacoma**

| Question | T / F/ NA | Comment |
|---|---|---|
| Radioactivity either was not measured or, if measured, is at or below background | True | |
| The cooler's custody seal, if present, is intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | False | Hand Del |
| Cooler Temperature is acceptable. | N/A | |
| Cooler Temperature is recorded. | N/A | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| There are no discrepancies between the sample IDs on the containers and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter. | N/A | |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |